



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,717	07/23/2003	Mark A. Toffle	STL10953	8127
7590 08/08/2007 Fellers Snider Blankenship Bailey & Tippens P C Bank One Tower 100 North Broadway Suite 1700 Oklahoma City, OK 73102-8820			EXAMINER MILLER, BRIAN E	
			ART UNIT 2627	PAPER NUMBER
			MAIL DATE 08/08/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/625,717
Filing Date: July 23, 2003
Appellant(s): TOFFLE ET AL.

MAILED
AUG 08 2007
Technology Center 2600

Mitchell McCarthy
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/20/07 appealing from the Office action mailed 4/5/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal now involves only claims 1-10, 21.

Claims 11-20 have been allowed subsequent to the filing of the Appeal Brief.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

A substantially correct copy of appealed claims 1-10, 21 appear on pages 13-16 of the Appendix to the appellant's brief. The minor errors are as follows: claims 11-20, are now indicated as allowable, and thus are not part of this Appeal.

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,178,059	Frees	1-2001
6,674,189	Watanabe et al	1-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-10, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frees (US 6,178,059) in view of Watanabe et al (US 6,674,189). (As per claims 1 & 21) Frees discloses a servo track writer assembly for recording servo pattern information on a disc, as shown in FIGs. 1 & 2, the assembly comprising: a spindle assembly 4 having a hub 6 supporting the disc 2 and a spindle motor 4 for rotating the hub 6; an actuator assembly 12 having an actuator arm 14 supported by an actuator bearing (not shown but at least inherent to the structure) for positioning the actuator arm 14 relative to the disc 2; and a servo recording head 8 supported by the actuator arm 14 relative to the disc 2 to record the servo pattern information on the disc as the spindle motor rotates the disc and the actuator bearing positions the actuator arm (see col. 3, lines 31-39). While Frees discloses a STW (servo track writing) procedure to be performed in a helium atmosphere (see col. 3, lines 31-32), the actual bearings of the spindle and actuator motor are not shown such that “at least one of the spindle motor and the actuator bearing comprises a gas-lubricated bearing with a working fluid comprising helium” is not expressly disclosed.

Watanabe et al, however, discloses a spindle motor apparatus (FIG. 2), which includes injecting helium (via port 28) into the spindle structure which then subsequently is provided into the bearings 3a, 3b, 4, (see col. 4, lines 6-14) to thereby reduce motor power, as well as vibration and noise of the motor. From this teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a helium gas to the bearings of Frees as taught by Watanabe et al. While the spindle motor of Watanabe et al is somewhat different than a disk drive motor and/or an actuator motor, e.g., higher velocity, it would have been within one having ordinary skill in the motor art to have realized the advantages of using helium in any bearing assembly including those of Frees.

The motivation would have been: as taught by Watanabe et al, using helium within a bearing motor assembly reduces vibration, noise and motor power consumption, thus prolonging the motor (see col. 4, lines 41-57).

The above description follows for the limitations of claim 2, such that the spindle motor comprises the gas-lubricated bearing with the working fluid comprising helium; and claim 3, wherein the actuator bearing comprises the gas-lubricated bearing with the working fluid comprising helium; and claim 4 wherein: the spindle motor comprises the gas-lubricated bearing with the working fluid comprising helium and the actuator bearing comprises a further gas-lubricated bearing with a working fluid comprising helium.

As per claim 5, Frees in view of Watanabe et al are considered to teach that the gas-lubricated bearing comprises a hydrostatic (or hydrodynamic-re claim 7) bearing comprising a gap (shown but unnumbered in Watanabe et al) between opposing bearing surfaces in the bearing, e.g., inner and outer races as typically known in the art, and a gas inlet 28 and a gas outlet 29, which are

coupled to the gap(s) (as shown in FIG. 1).

As per claim 6, Watanabe et al further shows a helium gas source 30 coupled to the gas inlet 28 through a pressure regulator 31; and a helium gas recovery tank 35 coupled to the gas outlet 29, which would be considered typical to most helium provided systems (see col. 3, line 56 to col. 4, line 5.

As per claim 10, Frees is considered to show the servo track writer assembly wherein the spindle motor is mounted within a disc drive in which the disc is installed.

With respect to claim 8, as Frees discloses advantageous results with helium at greater than 60%, one having ordinary skill would have arrived at the claimed “at least 70% helium by volume” through routine engineering optimization and experimentation, lacking criticality and any unobvious or unexpected results. Additionally, the law is replete with cases in which the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range(s); see *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Further, with respect to claim 9 and the STW being a dedicated servo writer, i.e., separate from the disk drive, Official Notice is taken that dedicated servo track writing assemblies are notoriously old and well known in this art, and utilizing one to write servo to the discs of Frees would have been readily provided for. Dedicated servo writers are conventional and are also

known to provide highly accurate servo writings. Using one or the other type STW would have been routinely chosen, depending on the disk drive.

(10) Response to Arguments

A...Appellant asserts (at page 8 of the Brief, 1st paragraph), that “The Examiner has not provided any evidence in the record that Watanabe ‘189 teaches or suggests maintaining separation of opposing bearing surfaces with a working fluid in a gas lubricated bearing as claimed.” (emphasis added by Appellant)

The Examiner notes that this claim language is not commensurate with independent claims 1 & 21, i.e., only claim 11 contains this language which claim(s), i.e., 11-20, have now been indicated as allowable. Claim 1 & 21 merely recite “a gas-lubricated bearing with a working fluid comprising helium,” which language is considered to be encompassed by the rejection of record, as described, supra.

To respond to this argument that the references fail to show certain features of applicant’s invention, it is noted that the feature upon which applicant relies (i.e., maintaining separation of opposing bearing surfaces with a working fluid) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

B...Appellant further attempts (on pages 10-12 of the Brief) to identify language in claim 11, which is different than what is recited in claims 1 & 21, to somehow make an argument that these limitations in claim 11, have the same meaning and should be incorporated into claims 1 & 21.

Art Unit: 2627

This argument appears to be misdirected and is not understood. As such, the Examiner has not addressed it.

C...The Examiner maintains that without the specific structure of this particular bearing recited in the claim(s), it is maintained that the present language in the claim(s) does not overcome the applied prior art. It is considered that the claim language does not preclude the use of the roller bearings with helium interspersed therebetween, as taught by Frees in view of Watanabe.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Brian E. Miller/

Primary Examiner AU 2627

Conferees:

/Hoa Thi Nguyen/

Supervisory Patent Examiner AU 2627

/Wayne R. Young/

Supervisory Patent Examiner AU 2627